

ABSTRACT OF THE DISCLOSURE

1 A sensor performs surface enhanced Raman spectroscopy and employs a filter to
2 minimize the effects of Raman scattering to self-excitation of the optical elements of the sensor.
3 The sensor comprises: a) a sensor body having a throughbore; an optical energy source for
4 generating an optical excitation signal; b) a surface enhanced Raman scattering structure that is
5 mounted to the sensor body through which the optical excitation signal is directed for irradiating
6 an analyte, whereupon the analyte generates primary Raman emissions in response to being
7 irradiated by the optical excitation signal, and wherein the surface enhanced Raman scattering
8 structure generates secondary Raman emissions when irradiated by the optical excitation signal;
9 c) an optical detector for generating an output signal that represents the spectral characteristics of
10 the primary and secondary Raman emissions in response to receiving the primary and second
11 Raman emissions; and d) a processor for substantially filtering the secondary Raman emission
12 from the primary Raman emissions and for generating an output signal representing the analyte.